

**In the Claims:**

1. (amended) A method of processing first and second received packets of real-time information, comprising the steps of:

A.\_\_\_\_computing for each of said received packets respective deadline intervals; and

B.\_\_\_\_ordering processing of the first and second received packets according to the respective deadline intervals.

2. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals.

3. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing on a link list information about the packets including the respective deadline intervals.

4. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing on a link list information about the packets including the respective deadline intervals, storing real-time information contained in the packets in a separate storage area, and also temporarily storing on the link list respective pointers associated with the respective deadline intervals, the pointers pointing to the real-time information in the separate storage area from the respective packets.

5. (amended) The method of claim 1 wherein further packets arrive and ~~further comprising~~ including computing for each futher packet a respective deadline interval from a packet arrival time and packet sequence number and the clock time and then ordering processing of the packets according to the respective deadline intervals.

6. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals, and periodically decrementing the deadline intervals as time passes.

7. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals, and wherein a further packet arrives and then computing for the further packet a further deadline interval and sorting the queue to insert information about the further packet on the queue in order of its further deadline intervals relative to the respective deadline intervals already on the queue.

8. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals adjusted for passage of time.

9. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals adjusted for passage of time, and discarding packets for which the deadline has passed.

10. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective deadline intervals, and decoding a packet having the shortest time to deadline as expressed by its deadline interval.

11. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets

on a queue in order of the respective deadline intervals, decoding a packet having the shortest time to deadline as expressed by its deadline interval, and updating the queue to substantially remove the information pertaining to that packet from the queue.

12. (amended) The method of claim 1 wherein the packets include real-time information encoded in frames having a frame size, and the method ~~further comprising~~ including temporarily storing information about the packets on a queue, the information ~~comprising~~ including frame size respective to the packets.

13. (amended) The method of claim 1 wherein the packets include real-time information encoded according to an identifiable coding process, and the method ~~further comprising~~ including temporarily storing information about the packets on a queue, the information ~~comprising~~ including an identifier of the identifiable coding process respective to the packets.

14. (amended) The method of claim 1 ~~further comprising~~ including generating information about the packets in the form of primary and secondary keys and temporarily storing information about the packets on a queue in order of the primary keys, and for packets having identical primary keys storing them in order of the secondary keys.

15. (amended) The method of claim 1 ~~further comprising~~ including generating information about the packets in the form of primary keys ~~comprising~~ including deadline intervals and secondary keys ~~comprising~~ including frame sizes, and temporarily storing information about the packets on a queue in order of the primary keys, and for packets having identical primary keys storing them in order of the secondary keys.

16. (amended) The method of claim 1 for use in a system having plural egress channel buffers into which arriving packets are distributed by channel whereby reserves in the egress channel buffers occur, the method ~~further comprising~~ including generating information about the packets in the form of primary keys ~~comprising~~ including deadline intervals and secondary keys ~~comprising~~ including sizes of reserve in the egress channel buffers, and temporarily storing information about the packets on a queue in order of the primary keys, and for packets having identical primary keys storing them in order of the secondary keys.

17. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing the deadline intervals from a packet arrival time and packet sequence number and a clock time.

18. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing such that for an arriving packet the deadline interval DI is the difference between an arrival time A of the arriving packet and a deadline time D.

19. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing wherein for an arriving packet the deadline interval DI is the difference between an arrival time A of the arriving packet and a deadline time D rounded down to the nearest unit of a predetermined frame time width.

20. (original) The method of claim 1 wherein the step of computing deadline intervals includes a step for an arriving packet j having a sequence number S<sub>j</sub> and frame width F of determining a deadline time D<sub>j</sub> for the arriving packet j from a deadline D<sub>i</sub> previously determined for an earlier

packet  $i$  having a sequence number  $S_i$  substantially by determining a product  $F$  multiplied by a number  $(S_j - S_i - 1)$  and adding the product to the deadline  $D_i$ .

21. (original) The method of claim 1 wherein the step of computing deadline intervals includes steps for an arriving packet  $j$  having a sequence number  $S_j$  and frame width  $F$  of determining a deadline time  $D_j$  for the arriving packet  $j$  from a deadline  $D_i$  previously determined for an earlier packet  $i$  having a sequence number  $S_i$  substantially by determining a product  $F$  multiplied by a number  $(S_j - S_i - 1)$  and adding the product to the deadline  $D_i$ ; and producing a representation of the deadline interval  $DI$  substantially as a difference between an arrival time  $A$  of the arriving packet less the deadline  $D_j$  for the arriving packet.

22. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing for an arriving packet  $i$  a deadline  $D_i$  by storing a time value  $T_o$  for a beginning packet of a stream; and continually incrementing the stored time value  $T_o$  by an amount representing a frame size  $F$  to obtain the deadline  $D_i$ .

23. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing, for an arriving packet  $i$  as  $i$ th packet in a stream, a deadline  $D_i$  by storing a time value  $T_o$  for a beginning packet of a stream; and producing a deadline  $D_i$  substantially as  $(T_o + (i - 1)F)$ ; and generating a deadline interval  $DI$  for arriving packet  $i$  substantially as a latest packet  $i$  time of arrival  $A_i$  less the deadline  $D_i$ .

24. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing, for an arriving packet  $i$  as  $i$ th packet in a stream having frame width  $F$ , and for an arriving packet  $j$  as  $j$ th packet in the

stream, a pair of deadlines  $D_i$  and  $D_j$  by storing a time value  $T_o$  for a beginning packet of a stream; and producing the deadline  $D_i$  substantially as  $(T_o + (i-1)F)$ ; and determining the deadline  $D_j$  for the arriving packet  $j$  from the deadline  $D_i$  substantially according to  $D_j = D_i + (S_j - S_i - 1)F$ .

25. (original) The method of claim 1 wherein the step of computing deadline intervals includes computing, for an arriving packet  $i$  as  $i$ th packet in a stream having frame width  $F$ , and for an arriving packet  $j$  as  $j$ th packet in the stream, a pair of deadline intervals  $D_{Ii}$  and  $D_{Ij}$  from respective arrival times  $A_i$  and  $A_j$  by storing a time value  $T_o$  for a beginning packet of a stream; and producing the deadline interval  $D_{Ii}$  substantially according to  $D_{Ii} = A_i - (T_o + (i-1)F)$ ; and determining the deadline interval  $D_{Ij}$  substantially according to  $D_{Ij} = A_j - (T_o + (i-1)F) - (S_j - S_i - 1)F$ .

26. (amended) The process of claim 1 ~~further comprising~~ including sorting information from the packets in order of the deadline intervals, the ordering of the processing being responsive to said sorting.

27. (amended) The process of claim 1 ~~further comprising~~ including sorting information from the packets in order of the deadline intervals, and further sorting within the deadline intervals according to a secondary key, the ordering of the processing being responsive to said sorting.

28. (amended) The process of claim 1 ~~further comprising~~ including sorting information from the packets in order of the deadline intervals, and further sorting within the deadline intervals according to a secondary key that takes into account the amount of time that a decoder takes to work, the ordering of the processing being responsive to said sorting.

29. (original) The method of claim 1 wherein the step of computing deadline intervals includes steps, for an arriving silence packet  $j$  representing a number of silence frames  $S$  having a frame width  $F$ , of determining a deadline interval  $DI_j$  for the arriving silence packet  $j$  from a deadline interval  $DI_i$  previously determined for an earlier packet  $i$ , substantially according to  $DI_j = DI_i + S \cdot F$ , in other words as the sum of the deadline interval  $DI_i$  added to a product of the number of silence frames  $S$  times the frame width  $F$ .

30. A method of processing packets from streams of real-time information in communications channels fed to buffers respective to the communications channels and accumulating information in reserves in the buffers, comprising the steps of:

A. computing for the buffers respective sizes of their respective reserves; and

B. ordering processing of the packets according to a priority depending at least in part on the sizes of the respective reserves.

31. (amended) The method of claim 30 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective sizes of the respective reserves.

32. (amended) The method of claim 30 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective sizes of the respective reserves.

33. (amended) The method of claim 30 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective sizes of the respective reserves, and wherein a further packet arrives in a given channel and then sorting the queue to insert information about the further packet on the queue in order of the size of the reserve in the buffer for the given channel.

34. (amended) The method of claim 30 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective sizes of the respective reserves and resorting the queue as the reserves change in size over time.



35. (amended) The method of claim 1 ~~further comprising~~ including temporarily storing information about the packets on a queue in order of the respective sizes of reserves, the information for each packet including a deadline for using that particular packet, and discarding packets for which the deadline has passed.

36. (amended) The method of claim 30 wherein the packets include real-time information encoded in frames having a frame size, and the method ~~further comprising~~ including temporarily storing information about the packets on a queue, the information comprising frame size respective to the packets.

37. (amended) The method of claim 30 wherein the packets include real-time information encoded according to an identifiable coding process, and the method ~~further comprising~~ including temporarily storing information about the packets on a queue, the information ~~comprising~~ including an identifier of the identifiable coding process respective to the packets.

38. (amended) The method of claim 30 ~~further comprising~~ including generating information about the packets in the form of primary and secondary keys and temporarily storing information about the packets on a queue in order of the primary keys, and for packets having identical primary keys storing them in order of the secondary keys.

39-80. (cancelled)

81. (amended) A single-chip integrated circuit comprising:

A. a processor circuit; and

B. embedded electronic instructions ~~comprising~~  
including an egress packet control establishing operations  
in the processor circuit generating for first and second  
received packets respective deadline intervals and ordering  
the processing in the processor circuit of the first and  
second received packets according to the respective deadline  
intervals.

82-136. (cancelled)